



Impact of EPR for Packaging on Consumer Prices

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Who is Signalfire Group?

SUPPORTING BUSINESS & GOVERNMENT MOVING TOWARD A CIRCULAR ECONOMY



Assist in Policy Development & Implementation



Assess Markets & Policies to Understand Impact



Develop Strategies to Align Goals & Compliance



Design/Assess Programs & Pilot Implementation

Research Question



RRS was asked by Oregon DEQ to compare the prices for consumer goods in jurisdictions with and without extended producer responsibility for packaging and printed paper (EPR for PPP) policy in place to determine if the presence of the policy correlates to higher prices paid by consumers.

Study Methodology

A VIRTUAL SHOPPING STUDY THAT COMPARED THE PRICE OF A RANGE OF PRODUCTS IN CANADIAN PROVINCES WITH AND WITHOUT EPR FOR PPP POLICIES.

- Identified 17 common consumer packaged goods that represent a range of material substrates, brands, and EPR fee rates. Beverages, household cleaners, and other products that might be included in other EPR or deposit programs were avoided, as they would not be subject to the relevant EPR for PPP fees.
- Identified three groups, each consisting of one community within a province with EPR for PPP and one in a province without EPR for PPP. The communities were grouped based on similar population size and geographic proximity.
- Sought out three retailers that serve each group of communities to ensure that data is not skewed based on one retailer's pricing strategy. Identified retailers that served both communities within each comparison group. For group one of the groups the team was only able to identify two online retailers serving both communities.
- "Virtual shopper" logged into the retailers' online shopping platforms using a simulated address from each target community and "shopped" for the items on the list.
- The price of each item was recorded before taxes and the data was analyzed to determine whether there was correlation between EPR policy and price.

Study Methodology (continued)

While not every retailer carried every item sought, this methodology generated eight comparative sets of products with 238 individual consumer product prices. Since not all stores in the groups carried both products, any non-matched products were removed from the list and 118 measured data points (price differences) were calculated. With non-matched products removed, a comparative set could also be evaluated based on the uniform basket of goods from the same retailer in each of the two communities of a group.

RRS also calculated the EPR program fees paid on each of the items studied in the three jurisdictions evaluated to better understand the sum of the fees as compared to product price and to evaluate the relationship between fee rates and price differences.

Key finding



Did not find a correlation between the existence of an EPR for PPP program and product prices, when each comparative set of stores was analyzed, or when all data points were evaluated.

Impact of EPR for PPP on Product Pricing: Product List

PRODUCT	BRAND	SUBSTRATE
Vlasic Pickles Zesty Dill 1L	ConAgra	Glass
Classico Napoli Tomato & Basil Sauce, 650 ml	Kraft Heinz	Glass
Hellman's Real Mayonnaise 445mL	Unilever	PET Jar
Colgate Total Mouthwash 1L	Colgate Palmolive	PET Bottle
Folgers Classic Roast 920g	JM Smuckers	HDPE Tub
Aveeno Body Wash 354 ml	Johnson & Johnson	HDPE Bottle
M&M's (stand up pouch) 330 g	M&M Mars	Multi-laminate
Lay's Classic Potato Chip 235g	PepsiCo	Multi-laminate
Campbell's Chicken Broth 900 ml	Campbells	Carton
Honey Bunches of Oats, Almonds 411g	Post	Boxboard / Bag
Cinnamon Toast Crunch 591g	General Mills	Boxboard / Bag
Philadelphia Cream Cheese (foil + box) 250g	Mondelez / Kraft Heinz	Multi-Material
Pringles Sour Cream and Onion 156g	Kellogg	Multi-Material
Haagen-Dazs vanilla 500mL	Nestle	Polycoat Paper Tub
Amy's Minestrone soup 398mL	Amy's	Steel Can
Fancy Feast (individual can) Beef 85g	Nestle	Aluminum Can
Earth Balance Butter 425g	GFA Brands	Polypropylene Tub

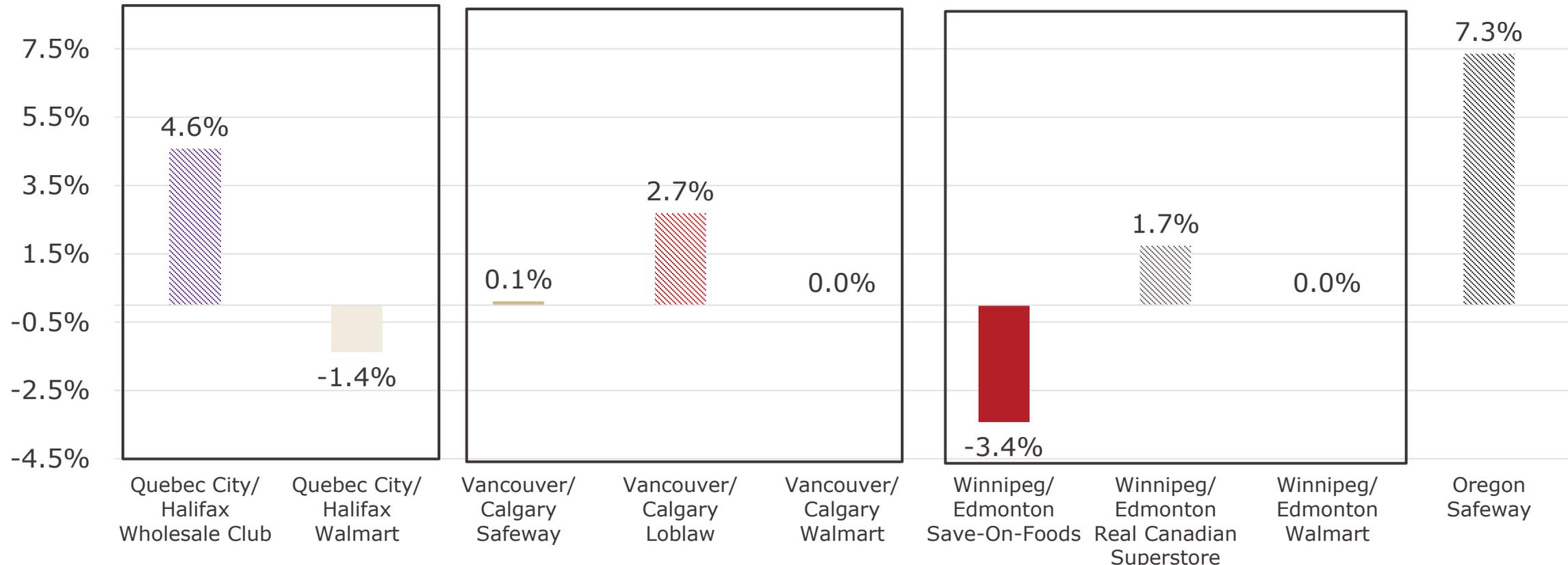
Impact of EPR for PPP on Product Pricing: Comparison Sets

COMMUNITY COMPARISONS

	No EPR for PPP	EPR for PPP	Retailers
Group 1	Calgary	Vancouver	<ul style="list-style-type: none"> • Walmart • Safeway • Loblaw
Group 2	Edmonton	Winnipeg	<ul style="list-style-type: none"> • Walmart • Real Canadian Super Store • Save-on-Foods
Group 3	Halifax	Quebec City	<ul style="list-style-type: none"> • Walmart • Wholesale Club

Impact of EPR for PPP on Product Pricing: Outcomes

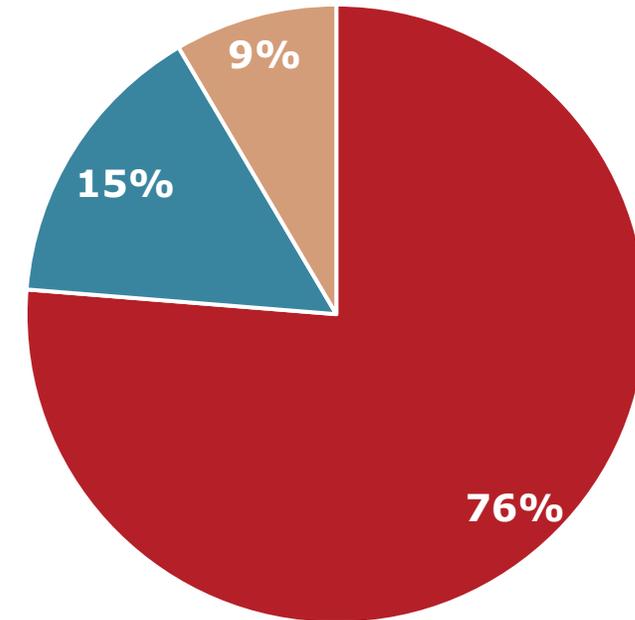
Percent Price Difference in Overall Basket of Goods



Note: Positive values (striped bars) indicate higher price in the EPR jurisdiction store (except Oregon); negative values (solid bars) indicate higher price in the non-EPR jurisdiction store. The Oregon bar shows the difference in price in the La Grande Safeway compared to a Portland Safeway.

Impact of EPR for PPP on Product Pricing: Outcomes

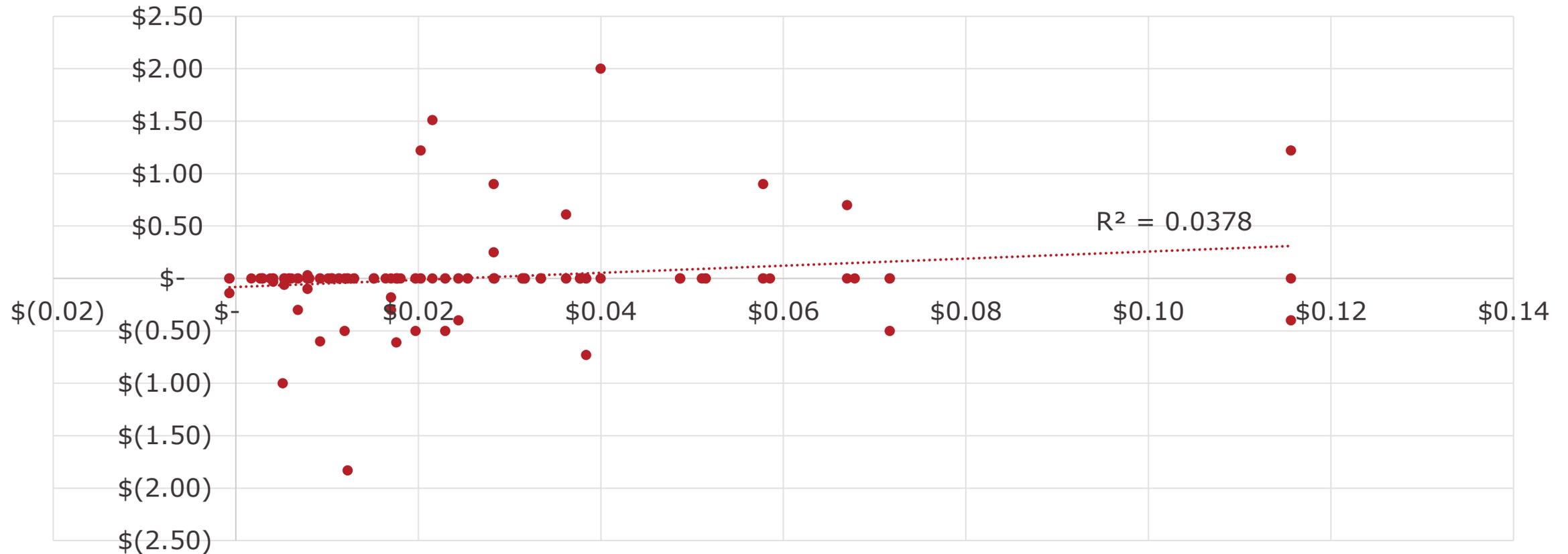
	Number of products	%
Prices equal in communities studied	90	76%
Higher price in communities in provinces without EPR for PPP	18	15%
Higher price in communities in provinces with EPR for PPP	10	9%
Total	118	100%



- Prices equal in communities studied
- Higher price in communities in provinces without EPR for PPP
- Higher price in communities in provinces with EPR for PPP

Impact of EPR for PPP on Product Pricing: Outcomes

EPR FEE VS. PRICE DIFFERENCE



A higher correlation between the EPR fee and price difference is reflected by an R^2 value approaching 1. An R^2 value approaching 0 indicates no correlation. The analysis yielded an R^2 value of 0.039, indicating no significant correlation.

EPR fees average much less than 1 percent of the product price

Product	BC			Quebec			Manitoba		
	Avg Price	Fee / Item	% of Price	Avg Price	Fee / Item	% of Price	Avg Price	Fee / Item	% of Price
Earth Balance Butter	\$ 7.27	\$ 0.02	0.28%	\$ 4.97	\$ 0.01	0.10%	\$ 6.15	\$ 0.01	0.15%
Hellman's Mayo	\$ 4.85	\$ 0.04	0.75%	\$ 4.22	\$ 0.01	0.28%	\$ 4.48	\$ 0.02	0.48%
Vlasic Zesty Dill Pickles	\$ 3.88	\$ 0.07	1.73%	\$ 2.97	\$ 0.07	2.28%	\$ 3.64	\$ 0.02	0.54%
Amy's Minestrone Soup	\$ 3.98	\$ 0.02	0.44%	\$ 3.97	\$ 0.01	0.25%	\$ 3.91	\$ 0.01	0.27%
Fancy Feast	\$ 0.82	\$ 0.01	0.65%	\$ 0.74	\$ 0.00	0.23%	\$ 0.73	\$ -0.0007	-0.10%
Pringles	\$ 2.72	\$ 0.04	1.41%	\$ 2.01	\$ 0.01	0.65%	\$ 2.71	\$ 0.03	1.17%
Haagen-Dazs Vanilla Ice Cream	\$ 6.59	\$ 0.02	0.27%	\$ 6.47	\$ 0.01	0.09%	\$ 5.98	\$ 0.02	0.25%
Honey Bunches of Oats	\$ 5.02	\$ 0.03	0.63%	\$ 4.67	\$ 0.02	0.35%	\$ 4.75	\$ 0.02	0.51%
Classico Pasta Sauce	\$ 4.18	\$ 0.06	1.38%	\$ 3.27	\$ 0.06	1.79%	\$ 3.15	\$ 0.02	0.54%
Cinnamon Toast Crunch	\$ 7.00	\$ 0.05	0.70%	\$ 5.72	\$ 0.03	0.44%	\$ 6.05	\$ 0.04	0.62%
Colgate Total Mouthwash 1L	\$ 6.73	\$ 0.05	0.77%	\$ 5.97	\$ 0.02	0.30%	\$ 7.15	\$ 0.03	0.40%
Campbell's Chicken Broth	\$ 2.46	\$ 0.03	1.15%	\$ 1.94	\$ 0.01	0.41%	\$ 2.11	\$ 0.02	1.09%
Philadelphia Cream Cheese	\$ 4.61	\$ 0.01	0.27%	\$ 4.17	\$ 0.01	0.14%	\$ 4.48	\$ 0.01	0.15%
M&M's	\$ 7.23	\$ 0.01	0.11%	\$ 6.97	\$ 0.00	0.04%	\$ 7.91	\$ 0.00	0.04%
Folgers Classic Roast	\$ 11.02	\$ 0.12	1.05%	\$ 9.71	\$ 0.04	0.41%	\$ 8.80	\$ 0.07	0.81%
Aveeno Body Wash	\$ 7.97	\$ 0.05	0.64%	\$ 7.97	\$ 0.01	0.10%	\$ 8.75	\$ 0.03	0.38%
Lay's Classic Potato Chip	\$ 3.33	\$ 0.01	0.34%	\$ 3.17	\$ 0.00	0.12%	\$ 3.14	\$ 0.00	0.13%
AVERAGE		\$ 0.04	0.74%		\$ 0.02	0.47%		\$ 0.02	0.44%

Reconciling OR DEQ study with modeled cost impact studies

WHEN MODELING COST IMPACTS, IT'S ALL ABOUT THE ASSUMPTIONS!

As you evaluate studies of modeled cost impacts, consider that:

- EPR does not mean “recycle at all costs”
- EPR fees are a compliance cost, not a manufacturing cost subject to a multiplier
- Assumptions should be explicitly shared and transparent
- Methodology should be clear and appropriate to the research question

OR DEQ study was not modeled; it analyzed empirical data on real products in the marketplace. The outcome of this study was unable to support a claim that EPR leads to higher prices.

Studies in the UK and Europe have found an economic benefit when EPR for packaging is implemented



Closing thoughts

There are many variables that impact the cost to deliver consumer packaged goods – labor rates, energy costs, distance to distribution centers, vertical integration supply chain... and of course policy

Definitively isolating the impact of each of these costs on the price of consumer products is complex, and may be impossible

OR DEQ study results suggest that these costs are not a significant driver of product price

If models that predict substantial increase in consumer prices were accurate, the OR DEQ study would have found demonstrably higher prices in jurisdictions with EPR as compared to those without.





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